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Stolowitz Ford Cowger LLP 621 SW Morrison St			LEE, CHEUKFAN	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)				
	10/604,172	HSU ET AL.				
Office Action Summary	Examiner	Art Unit				
	Cheukfan Lee	2625				
The MAILING DATE of this communication app Period for Reply	ears on the cover sheet with the c	correspondence address				
A SHORTENED STATUTORY PERIOD FOR REPLY WHICHEVER IS LONGER, FROM THE MAILING DATE of time may be available under the provisions of 37 CFR 1.13 after SIX (6) MONTHS from the mailing date of this communication.  If NO period for reply is specified above, the maximum statutory period varieties for reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUNICATION 36(a). In no event, however, may a reply be tir will apply and will expire SIX (6) MONTHS from a cause the application to become ABANDONE	N. nely filed the mailing date of this communication. ED (35 U.S.C. § 133).				
Status		·				
1) Responsive to communication(s) filed on 20 N	ovember 2007.	•				
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closed in accordance with the practice under E						
Disposition of Claims						
4)⊠ Claim(s) <u>1-26</u> is/are pending in the application.						
4a) Of the above claim(s) is/are withdrawn from consideration.						
5) Claim(s) is/are allowed.						
6)⊠ Claim(s) <u>1-26</u> is/are rejected.						
7) Claim(s) is/are objected to.						
8) Claim(s) are subject to restriction and/o	r election requirement.					
Application Papers	·					
	_					
9) The specification is objected to by the Examiner.						
10)⊠ The drawing(s) filed on <u>30 June 2003</u> is/are: a)⊠ accepted or b)□ objected to by the Examiner.  Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).						
Replacement drawing sheet(s) including the correct 11) The oath or declaration is objected to by the Ex						
11) I The oath or declaration is objected to by the Ex	amilier. Note the attached Office	e Action of Ionn't 10-132.				
Priority under 35 U.S.C. § 119						
12)⊠ Acknowledgment is made of a claim for foreign	priority under 35 U.S.C. § 119(a	)-(d) or (f).				
a)⊠ All b)□ Some * c)□ None of:						
<ol> <li>Certified copies of the priority document</li> </ol>	s have been received.					
<ol><li>Certified copies of the priority document</li></ol>						
<ol><li>Copies of the certified copies of the prior</li></ol>	rity documents have been receiv	ed in this National Stage				
application from the International Bureau	ی (PCT Rule 17.2(a)).	``				
* See the attached detailed Office action for a list	of the certified copies not receive	ed.				
Attachment(s)						
1) Notice of References Cited (PTO-892)	4) Interview Summary					
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date.					
3) Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date	5) Notice of Informal I	ratent Application				
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- 1. Claims 1-26 are pending. Claims 15-26 are newly added. Claims 1, 5, 9, 10, 13, 18, and 21 are independent.
- 2. The indicated allowability of claims 1-4 and 10-14 is withdrawn in view of the newly discovered reference(s) to Koshiyouji et al. (U.S. Patent No. 5,150,227).

  Rejections based on the newly cited reference(s) follow.
- 3. Claims 1-8 and 10-12 are objected to because of the following:

In claim 1, line 14 and claim 5, lines 16-17, "will sequentially pass" should read – sequentially passes – in order to be definite.

Claims 2-4 and 6-8 are objected as being dependent on objected claims 1 or 5.

In claim 10, line 3, "comprises" should read -- comprising --. Claim 10 was objected to in the previous Office action for reciting "comprises" instead of -- comprising

Claims 11-12 are objected to as being dependent on objected claim 10.

- 4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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5. Claims 1-8 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiyouji et al. (U.S. Patent No. 5,150,227) in view of Applicant's admitted prior art.

Regarding claim 1, Koshiyouji et al. discloses all subject matter claimed, except for the plurality of reflecting mirrors within the shell body of the scan head.

Koshiyouji et al. discloses a method of designing a scanning head for a scanner (Figs. 1 and 2, col. 3, line 53 - col. 4, line 46), wherein the scanner has a platform (documents table 3) and a scan head (carriage 4) with the scanning head (4) capable of moving along a scanning direction (the sub scanning direction) to scan a document placed on the platform (3), the method comprising providing a shell body (main frame 22 of carriage 4, the main frame 22 for holding a light a light source 19, a lens array 20 and CCD line sensor 21) of the scanning head (4) having a long side, wherein a length of the long side is smaller than a length of the platform (3) along a direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction) (Figs. 1 and 2), providing a scattering light source (19) mounted on the long side of the shell body (main frame 22) for inherently producing a parallel beam of light, wherein a length of the scattering light source (19) is smaller than the length of the long side of the shell body (frame 22, which holds the light source 19, lens array 20 and CCD line sensor 21) (Fig. 2, col. 4, lines 22-35), providing a lens (22) within the shell body (frame 22), and providing a photo-sensor (21) within the shell body (22), wherein the parallel beam from the light source (19) projecting onto the platform (3) sequentially passes through the lens (20) to arrive at the photo-sensor (21).

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With respect to the difference between Koshiyouji et al. and the claimed invention, i.e, the claimed plurality of reflecting mirrors within the shell body of the scan head, a scan head (110) having a lens (116), a photo-sensor (118) and a plurality of reflecting mirrors (114) for sequentially reflecting a light beam reflected by a document onto the photo-sensor (118) through the lens (116) is taught by Applicant's admitted prior art (Figs. 2, paragraph 0008 and Fig. 1 paragraph 0007). The scanning head (110) is understood to be moving within an outer casing (102) in the sub scanning direction during a scanning operation (Fig. 1).

One of ordinary skill in the art would have understood that this reduction type of scanning head (110) comprising a plurality of reflecting mirrors requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to the full size photo-sensor (CCD line sensor 21) of Koshiyouji et al., and therefore, reduces the cost of the scanning system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the scanning head (having lens array 20 and CCD line sensor) of Koshiyouji et al., which does not have a plurality of reflecting mirrors, with the scanning head (110) of Applicant's prior art having a plurality of reflecting mirrors, in order to reduce the cost of the scanning system.

Regarding claim 2, Applicant's prior art reflecting mirrors (114 in Fig. 2) each have a length smaller than that of the scattering light source (112) (Figs. 1 and 2).

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Regarding claim 3, it is inherent that a length of the parallel light beam projecting onto the platform (3) of Koshiyouji et al. is larger than or equal to the length of the platform (3) in the direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction) since nothing is disposed between the two ends of the light source (19) and the corresponding two ends of the platform (3) to block the light from the light source (19) from projecting onto the platform (3) (Figs. 1 and 2).

Regarding claim 4, the light source (19) of Koshiyouji et al. and the light source (112) of Applicant's prior art both are a lamp tube.

Regarding claim 5, Koshiyouji et al. discloses a method of designing an optical path for a scanner, wherein the scanner has a platform (document table 3) and a scanning head (the scanning head having a main frame 22 that holds a lens array 20 and a CCD line sensor 21), the scanning head (20-22) being movable in a scanning direction (the sub scanning direction) to scan a document placed on the platform (3), (Figs. 1 and 2, col. 3, line 53 - col. 4, line 46), the method comprising providing a scattering light source (19) mounted on the scanning head (frame 22 holding lens array 20 and CCD line sensor 21) (Fig. 2), wherein a length of the scattering light source (19) is smaller than a length of a window (3) on the platform (3) along a direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction), providing a lens (20) positioned along an optical path, positioning a photo-sensor (CCD line sensor 21) so that a parallel beam from the scattering light source (19) being

projected onto the platform (3) passes through the lens to arrive at the photo-sensor (21).

Koshiyouji et al. does not disclose the claimed "providing a plurality of reflecting mirrors sequentially positioned along an optical path beyond the document. However, a scan head (110) having a lens (116), a photo-sensor (118) and a plurality of reflecting mirrors (114) for sequentially reflecting a light beam reflected by a document onto the photo-sensor (118) through the lens (116) is taught by Applicant's admitted prior art (Figs. 2, paragraph 0008 and Fig. 1 paragraph 0007). The scanning head (110) is understood to be moving within an outer casing (102) in the sub scanning direction during a scanning operation (Fig. 1).

One of ordinary skill in the art would have understood that this reduction type of scanning head (110) comprising a plurality of reflecting mirrors requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to the full size photo-sensor (CCD line sensor 21) of Koshiyouji et al., and therefore, reduces the cost of the scanning system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the scanning head (having lens array 20 and CCD line sensor) of Koshiyouji et al., which does not have a plurality of reflecting mirrors, with the scanning head (110) of Applicant's prior art having a plurality of reflecting mirrors, in order to reduce the cost of the scanning system.

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Claims 6 and 7 are rejected for the reasons given for claims 4 and 2, respectively, for claiming the same limitations.

Regarding claim 8, based on the method of Koshiyouji et al. in view of Applicant's admitted prior art and referring to Fig. 1 of Koshiyouji et al. and Applicant's prior art Fig. 2, one of ordinary skill in the art would have realized that a length of a scan line produced when the parallel beam is projected from the scattering light source (light source 19 of Koshiyouji et al., which corresponds to light source 112 in Applicant's prior art Fig. 2 except that 19 is shorter than 112, relatively speaking, since 19 is shorter than the width of the platform 106 of Fig. 2) onto the platform (106 of Applicant's Fig. 2), is inherently defined as a maximum width of scanning on the document and is inherently an optimal width of the window on the platform (116 in Applicant's Fig. 2, or 3 in Fig. 1 of Koshiyouji et al.), which is defined by the characteristics of the lens (116 in prior art Fig. 2) being employed.

Regarding claim 10, all claim limitations are met by Koshiyouji et al. discussed above for claim 1. Koshiyouji et al. discloses a scanning head (carriage 4 having a main frame 22, lens array 20 and CCD line sensor 21) for a scanner (Figs. 1 and 2, col. 3, line 53 - col. 4, line 46), wherein the scanner has a platform (3) for placing thereon a document, the scanning head (20-22) is capable of moving forward in a scanning direction (the sub scanning direction) to scan the document, the scanning head comprises a shell body (main frame 22 of carriage 4) with a long side (the side along

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the main scanning direction, Figs. 1 and 2), wherein a length of the long side is smaller than a length of the platform (3) in a direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction), a scattering light source (19) mounted on the long side of the shell body (frame 22 of carriage 4) for producing a parallel beam of light (Fig. 2), wherein the scattering light source (19) has a length smaller than the length of the long side of the shell body (frame 22) (Fig. 2), a lens (20) within the shell body (22), and a photo-sensor (CCD line sensor 21) within the shell body (22), wherein the parallel beam from the light source (19) projecting onto the platform (3) passes through the lens (20) to arrive at the photo-sensor.

Koshiyouji et al. does not plurality of reflecting mirrors within the shell body of the scan head as claimed. However, a scan head (110) having a lens (116), a photosensor (118) and a plurality of reflecting mirrors (114) for sequentially reflecting a light beam reflected by a document onto the photo-sensor (118) through the lens (116) is taught by Applicant's admitted prior art (Figs. 2, paragraph 0008 and Fig. 1 paragraph 0007). The scanning head (110) is understood to be moving within an outer casing (102) in the sub scanning direction during a scanning operation (Fig. 1).

One of ordinary skill in the art would have understood that this reduction type of scanning head (110) comprising a plurality of reflecting mirrors requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to the full size photo-sensor (CCD line sensor 21) of Koshiyouji et al., and therefore, reduces the cost of the scanner.

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the scanning head (having lens array 20 and CCD line sensor) of Koshiyouji et al., which does not have a plurality of reflecting mirrors, with the scanning head (110) of Applicant's prior art having a plurality of reflecting mirrors, in order to reduce the cost of the scanner.

Claims 11, 12, are rejected for the reasons given for claims 4 and 2, respectively.

Regarding claim 13, Koshiyouji et al. discloses a scanner for scanning a document (Figs. 1 and 2, col. 3, line 53 – col. 4, line 46), comprising an outer casing (2) with an inherent opening section (Fig. 1), a platform (3) inherently over the opening section for supporting the document, a scanning head (carriage 4 having a main frame 22 holding lens array 20 and CCD line sensor 21) within the outer casing, wherein the scanning head is capable of moving forward in a scanning direction (the sub scanning direction) to scan the document (O), the scanning head further including a shell body (main frame 22 holding lens array 20 and CCD line sensor 21) with a long side (the side along the main scanning direction), wherein a length of the long side is smaller than a length of the platform (3) in a direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction), a scattering light source (19) mounted on the long side of the shell body (main frame 22) for producing a beam of light, wherein the scattering light source (19) has a length smaller than the length of the long side of the shell body (Fig. 2), a lens (20) within the shell body (22), and a photo-

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sensor (21) within the shell body (22) positioned so that when the beam of light is projected onto the platform (3), the beam of light passes through the lens (20) to arrive at the photo-sensor (21).

The scanner of Koshiyouji et al. further comprises a linear guide (6) within the outer casing (2) for guiding the scanning head (20-22 of carriage 4), and a driving device (motor 13) within the outer casing (2) for driving the scanning head (20-22 of carriage 4).

Koshiyouji et al. does not plurality of reflecting mirrors within the shell body of the scan head as claimed. However, a scan head (110) having a lens (116), a photosensor (118) and a plurality of reflecting mirrors (114) for sequentially reflecting a light beam reflected by a document onto the photo-sensor (118) through the lens (116) is taught by Applicant's admitted prior art (Figs. 2, paragraph 0008 and Fig. 1 paragraph 0007). The scanning head (110) is understood to be moving within an outer casing (102) in the sub scanning direction during a scanning operation (Fig. 1).

One of ordinary skill in the art would have understood that this reduction type of scanning head (110) comprising a plurality of reflecting mirrors requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to the full size photo-sensor (CCD line sensor 21) of Koshiyouji et al., and therefore, reduces the cost of the scanner.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the scanning head (having lens array 20 and CCD line sensor) of Koshiyouji et al., which does not have a plurality of reflecting mirrors, with the

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scanning head (110) of Applicant's prior art having a plurality of reflecting mirrors, in order to reduce the cost of the scanner.

Claim 14 is rejected for the reason given for claim 4.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- 7. Claims 18-22, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Koshiyouji et al. (US 5,150,227).

Regarding claim 18, Koshiyouji et al. discloses a scanning head (carriage 4) for a scanner (Figs. 1 and 2, col. 3, line 53 – col. 4, line 46), the scanner having a platform (3) for placing a document (O), the scanning head (4) being movable in a scanning direction (sub scanning direction) to scan the document (O), the scanning head (4) comprising a shell body (main frame 22) with a long side (Figs. 1 and 2, col. 4, lines 22-35), wherein a length of the long side is smaller than a length of the platform (3) in a direction (main scanning direction) perpendicular to the scanning direction (sub scanning direction) (Fig. 1).

Regarding claim 19, a lens (20) is installed inside the shell body (main frame 22) (Figs. 1 and 2).

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Regarding claim 20, a scattering light source (19) is mounted on the long side of the shell body (22) for inherently producing a parallel beam of light (Figs. 1 and 2). The light source (19) has a length smaller than the length of the long side of the shell body (22) (Figs. 1 and 2).

Regarding claim 21, Koshiyouji et al. discloses a scanning system (Figs. 1 and 2, col. 3, line 53 – col. 4, line 46) comprising means (document table 3 and casing 2) for accommodating a document (O) being scanned, means (lens array 20 and CCD line sensor 21 of carriage 4) for imaging the document (O), means (main frame 22 of carriage 4) for containing the means for imaging (light source 19, lens array 20 and CCD line sensor 21 of carriage 4), and means (motor 13 and carriage supporting member 6) for moving the means for containing (main frame 22 of carriage 4) in a scanning direction (the sub scanning direction), wherein the means for containing (main frame 22 of carriage 4) is smaller than the means for accommodating (document table 3 and casing 2) in a direction (the main scanning direction) perpendicular to the scan direction (sub scanning direction).

Regarding claim 22, the means (3 and 2) for accommodating a document comprises an outer casing (2) and a platform (3) (Fig. 1).

Regarding claim 25, the means for containing (main frame 22 of carriage 4) comprises a shell body (frame 22) with a long side, wherein a length of the long side is

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smaller than the means for accommodating (document table 3 and casing 2) in a direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction) (Figs. 1 and 2).

Regarding claim 26, the means for moving (motor 13 and carriage supporting member 6) comprises a linear guide (6) and a driving device (13).

- 8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiyouji et al. (U.S. Patent No. 5,150,227) in view of Tanaka et al. (U.S. Patent No. 5,973,797).

Regarding claim 23, Koshiyouji et al. discussed for claim 21 does not disclose that a width of a window on the platform (3) accommodates a width of an A4 size document.

Tanaka et al. disclose a flatbed scanner wherein a width of a window on a platform accommodates a width of an A4 size document (Figs. 1-3 and 5).

Both the scanner of Tanaka et al. and the scanner of Koshiyouji et al. are flat bed scanners. Since in Koshiyouji et al. the means for containing (main frame 22) is smaller

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relative to the means (platform 3 and casing 2) for accommodating the document in the main scanning direction, one of ordinary skill in the art would have realized the proportional relationship between the main frame (22) of the carriage (4) and the document platform (3) in the main scanning direction, and the advantage of having an increased width of main frame (22 of 4) in the main scanning direction (along with an increased width of the components within the frame 22 in the main scanning direction) with an increased width of the platform (3) for accommodating a large document, such as an A4 size document. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Koshiyouji et al. and Tanaka et al. to provide a scanning system having a window width for accommodating a width of a larger document, such as an A4 size document.

10. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Koshiyouji et al. (U.S. Patent No. 5,150,227) in view of Applicant's admitted prior art.

Regarding claim 24, the means imaging (lens array 20 and CCD line sensor 20) of Koshiyouji et al. discussed for claim 21 comprises a lens (lens array 20) and a photosensor (CCD line sensor 21) (col. 4, lines 22-35).

The means for imaging (lens array 20 and CCD line sensor 21) does not comprise a plurality of reflecting mirrors as claimed.

However, the type of means for imaging comprising a lens, a photo-sensor and a plurality of reflecting mirrors in a scanning system is taught by Applicant's admitted prior art (Fig. 2, paragraph 0008, Fig. 1, paragraph 0007). The admitted prior art means for

imaging (scanning head 110) comprises a plurality of reflective mirrors (114), a lens (116), and a photo-sensor (118). The scanning head (110) is understood to be moving within an outer casing (102) in the sub scanning direction during a scanning operation (Fig. 1).

One of ordinary skill in the art would have understood that this reduction type of means (scanning head 110) for imaging comprising a plurality of reflecting mirrors requires a smaller or shorter photo-sensor (118) in the main scanning direction as compared to the full size photo-sensor (CCD line sensor 21) of Koshiyouji et al., and therefore, reduces the cost of the scanning system.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to substitute the means for imaging (lens array 20 and CCD line sensor) of Koshiyouji et al., which does not have a plurality of reflecting mirrors, with the means for imaging of Applicant's prior art having a plurality of reflecting mirrors, in order to reduce the cost of the scanning system.

11. Claims 9 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Han (U.S. 5,986,774).

Regarding claim 9, Han discloses a scanner (Figs. 3 and 4, col. 4, lines 10-63) comprising an outer casing (22) having an opening section and supporting surfaces (Fig. 4, the surfaces or sections of 22 shown at the left and right sides of Fig. 2 and protruding toward the interior of the casing 22) below the opening section, the opening section having a circumference defining an area of the opening section (see Fig. 4, the

circumference defined by lines including a line(s) where the upper most vertical edge of 22 and the upper most vertical edge or peripheral edge of 24 meet), and a platform (24) having a peripheral edge forming an area of the platform (24), at least a portion of the peripheral edge being supported by the supporting surfaces (Fig. 4), wherein the area of the platform (24) is at least approximately identical to the are of the opening section (Fig. 4).

Regarding claim 15, the platform (24) abuts the outer casing (22) (Fig. 4).

Regarding claim 16, Han further discloses a scanning head (carriage 50) movable in a scanning direction (the sub scanning direction, which is a direction into the page) (Fig. 4, col. 4, lines 41-63).

Regarding claim 17, a shell body of the scanning head (the shell body of the carriage 50) has a long side (the side along the left-right direction of Fig. 4 or the main scanning direction), a length of the long side is smaller than a length of the platform (24) along a direction (the main scanning direction) perpendicular to the scanning direction (the sub scanning direction) (Fig. 4, col. 4, lines 41-63).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cheukfan Lee whose telephone number is (571) 272-7407. The examiner can normally be reached on 9:30 a.m. to 6:00 p.m., Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cheukfan Lee January 31, 2008